



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,172	02/22/2005	Mark Thomas Johnson	NL 020785	7658
24737 7590 05/17/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER JOSEPH, DENNIS P	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 05/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/525,172	Applicant(s) JOHNSON, MARK THOMAS	
	Examiner Dennis P. Joseph	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. 10/525,172.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to application No. 10/525,172 on February 22, 2005.

Claims 1-7 are pending and have been examined.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections – 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-5** rejected under 35 U.S.C. 102(b) as being anticipated by **Goden (US 2001/0030639 A1)**

5. Goden teaches in Claim 1:

An electrophoretic display panel, for displaying a picture and a subsequent picture ([0039], “it is an object of the present invention to provide a novel electrophoretic display method and device”), comprising:

Art Unit: 2629

a first and a second opposed substrate ([0040], “**comprising a first substrate, first and second driving electrodes arranged on the first substrate, a second substrate arranged in an opposing relation to the first substrate.**”);

an electrophoretic medium between the substrates (Figure 1 shows the medium in which the particles are in, transparent dielectric liquid 7), the electrophoretic medium comprising first charged particles having a first color ([0056], “migratory particles are black or deep black in color” These are the black particles in the liquid as shown in Figure 1.);

a plurality of pixels ([0090], “FIG. 1 illustrates the construction comprising two pixels.” This structure is meant to repeat and is just a small portion);

a first, a second and a third electrode associated with each pixel (Figure 1 shows the electrodes 3, 4 and 5. [0093], “the color of the first driving electrode 3 is black, the color of the second driving electrode 4 is white, and the third driving electrode 5 is transparent.”); and

drive means, being able to control a first, a second and a third potential on the first, the second and the third electrode, respectively, to have picture potential values for displaying the picture ([0041], “the electrophoretic display method further comprises a step of applying voltages to the first driving electrode, the second driving electrode and the third driving electrode.” These voltages are applied to generate pictures.), subsequently to have interval potential values before having subsequent picture potential values for displaying the subsequent picture (Figure 15A shows the opposite polarity interval potentials that are applied as the data signals between each picture potential value. This process is described as bi-directional writing, [0137], “With this feature, the display cell of this Example is able to perform the bi-directional writing, i.e., changes from a white to black view and writing from a black to white view.” This is

Art Unit: 2629

how the current potentials across the electrodes can be altered and the timing chart in 15A shows this.), characterized in that

the drive means are able to apply reset potential values to the electrodes as the interval potential values for bringing the charged particles into a predetermined reset position between displaying the picture and displaying the subsequent picture. (Figure 15A shows the timing chart for applying the intermediate voltage level for D11-D23 in between the picture and subsequent picture. [0144])

6. Goden teaches in Claim 2:

A display panel as claimed in claim 1, characterized in that the first substrate (Figure 1, substrate 1) comprises for each pixel the first electrode and the second substrate (Figure 2, substrate 2) comprises for each pixel the second and the third electrode. ([0040], “electrophoretic display device comprising a first substrate, first and second driving electrodes arranged on the first substrate, a second substrate arranged in an opposing relation to the first substrate, a third driving electrode arranged on the second substrate.” Figure 1 shows the electrodes 3, 4 and 5. Please note electrode 5 is considered to be the ‘first driving electrode’)

7. Goden teaches in Claim 3:

A display panel as claimed in claim 1, characterized in that the reset potential values are opposite to the picture potential values and the drive means are able to apply the reset potential values for a same duration as the picture potential values, before applying the subsequent picture potential values. (Figure 15A, it shows that the opposite polarity values are +30V and -30V and

Art Unit: 2629

the duration they are applied is 30 ms, [0144], "Further, a time period A represents a period in which the migratory particles are moved away from the third driving electrode, and is set to 30 msec. A time period B represents a period in which the migratory particles are horizontally migrated, and is set to 30 msec." The time periods are of the same duration.)

8. Goden teaches in Claim 4:

A display panel as claimed in claim 1, characterized in that the predetermined reset position is an extreme position (This process is described as bi-directional writing, [0137], "With this feature, the display cell of this Example is able to perform the bi-directional writing, i.e., changes from a white to black view and writing from a black to white view." The extreme position can be either white or black), the reset potential values are opposite to the picture potential values and the drive means are able to apply the reset potential values for at least a same duration as the picture potential values, before applying the subsequent picture potential values. (Figure 15A, it shows that the opposite polarity values are +30V and -30V and the duration they are applied is 30 ms, [0144], "Further, a time period A represents a period in which the migratory particles are moved away from the third driving electrode, and is set to 30 msec. A time period B represents a period in which the migratory particles are horizontally migrated, and is set to 30 msec." The time periods are of the same duration.)

9. Goden teaches in Claim 5:

A display panel as claimed in claim 1, characterized in that the first charged particles consist of one of negatively charged particles and positively charged particles, and the drive

Art Unit: 2629

means are able to apply the reset potential values to the electrodes for bringing the charged particles into the predetermined reset position, which is associated with the first electrode.

([0043], “provide a time period in which a relationship of potentials of the first driving electrode and the second driving electrode being lower than a potential of the **third driving electrode is satisfied for positively charged migratory particles**, or a time period in which a relationship of potentials of the first driving electrode and the second driving electrode being higher than a potential of the **third driving electrode is satisfied for negatively charged migratory particles**.” The reset potential can be for either negatively or positively charged terminals. The first driving electrode is 5 as shown in Figure 1.)

Claim Rejections – 35 USC § 103

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103(a) that forms the basis for the rejections under this section made in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2629

11. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukuda et al. (US 2003/0040346 A1)** in view of **Miyashita (US 2005/0059441 A1)**

12. Goden teaches in Claim 6:

A display panel as claimed in claim 1, characterized in that the first charged particles consist of one of negatively charged particles and positively charged particles ([0043], “provide a time period in which a relationship of potentials of the first driving electrode and the second driving electrode being lower than a potential of the **third driving electrode is satisfied for positively charged migratory particles**, or a time period in which a relationship of potentials of the first driving electrode and the second driving electrode being higher than a potential of the **third driving electrode is satisfied for negatively charged migratory particles**.” The reset potential can be for either negatively or positively charged terminals. The first driving electrode is 5 as shown in Figure 1.), but

Goden does not explicitly teach that “ for each pixel a fourth electrode is present distant from the second substrate, and being able to receive a fourth potential from the drive means for bringing the charged particles into the predetermined reset position, which is associated with the fourth electrode.”

However, in the same field of endeavor, electrophoretic display devices, Nakao teaches “The electrophoresis display device according to claim 1, further comprising: a plurality of **fourth electrodes** disposed on a third surface.” (Column 13, Claim 6) This fourth electrode is on a

Art Unit: 2629

different substrate and would also receive a fourth potential for bringing charged particles into a predetermined reset position.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to integrate the use of the fourth electrode as taught by Nakao with Goden's electrophoretic display device with the motivation that it is obvious to have more electrodes to better address the pixel dynamically and with options.

13. Goden teaches in Claim 7:

A display panel as claimed in claim 1 characterized in that the first charged particles are negatively charged, the electrophoretic medium further comprises second charged particles having a second color and a positive charge([0043], "provide a time period in which a relationship of potentials of the first driving electrode and the second driving electrode being lower than a potential of the **third driving electrode is satisfied for positively charged migratory particles**, or a time period in which a relationship of potentials of the first driving electrode and the second driving electrode being higher than a potential of the **third driving electrode is satisfied for negatively charged migratory particles**." The reset potential can be for either negatively or positively charged terminals. The first driving electrode is 5 as shown in Figure 1.), but

Goden does not explicitly teach "for each pixel a fourth and a fifth electrode are present distant from the second substrate and able to receive a fourth and a fifth potential, respectively from the

Art Unit: 2629

drive means for bringing the charged particles into the predetermined reset position, which is associated with the fourth and the fifth electrode, respectively.”

However, in the same field of endeavor, electrophoretic display devices, Nakao teaches “The electrophoresis display device according to claim 1, further comprising: a plurality of **fourth electrodes** disposed on a third surface of the second board; a plurality of **fifth electrodes** disposed in parallel with the plurality of fourth electrodes on the third surface of the second board.” (Column 13, Claim 6) These fourth and fifth electrodes are on a different substrate and would also receive a fourth and fifth potential for bringing charged particles into a predetermined reset position.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to integrate the use of the fourth and fifth electrodes as taught by Nakao with Goden’s electrophoretic display device with the motivation that it is obvious to have more electrodes to better address the pixel dynamically and with options.

Conclusions

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Matsuda et al. (US 6822783)**, **Kawai (US 2004/0085618)** are cited to teach of electrophoretic display devices with interval voltage driving.

Art Unit: 2629

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis P. Joseph whose telephone number is 571-270-1459. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJ

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

